

# ICONOGRAPHIA CYPERACEARUM I.\*

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## Introduction

Since the differentiation of the sedges depends almost exclusively upon the minute floral characters, which are difficult to be adequately expressed in writing, precise drawings in coordination with technical descriptions are the most useful means of identification of the cyperaceous plants. For this reason, some cyperologists have made special effort to illustrate the Cyperaceae they handled as seen in such publications as "The Illustrations of the Genus *Carex*" (1858-67) by F. Boott, "Illustrations of Cyperaceae" (1909) by C. B. Clarke, or "North American Cariceae" (1940) by K. K. Mackenzie.

In 1949 I have started preparation of the illustrations of Cyperaceae with Asiatic representatives primarily to supplement my fully descriptive taxonomic account of eastern Asiatic Cyperaceae of some 1,200 pages of typescript. At that time, however, publication of such a voluminous paper was hardly possible, and only its framework was printed in 1961-62 in the *Journal of the Faculty of Science, the University of Tokyo*, Volume 8, Parts 3 and 4, leaving out most illustrations and taxonomic technical descriptions. The illustrations and descriptions, which the present series of paper begins with, were thus made some twenty years ago, and were slightly edited since I joined the staff of the New York Botanical Garden. Ten to twenty plates are planned to be presented in each part, and a special emphasis will be given to Asiatic and South American representatives as they constitute the most poorly illustrated portions of the family.

I would like to express my appreciation to "Fraulein Ilona Kirchner, who so ably typed my sometimes difficult manuscript.

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## Plate 1. CAREX PACHYGYNA Franchet &amp; Savatier

Carex pachygyna Franchet & Savatier, Enum. Pl. Japon. 2: 133, 1877 & 560, 1879.

For synonyms see T. Koyama, Journ. Fac. Sci. Univ. Tokyo, III, 8 (4): 233, 1962.

Rhizome creeping, ligneous, thickened at base of shoots; the internodes 1-2.2 mm long, 2-3 mm thick, clothed with reddish brown scales. Leaves radical, fascicled, narrowly lance-obovate to lanceolate, 8-15 cm long, 1-2 cm wide, weakly inverted-W-shaped with 3 costas and many longitudinal nerves, herbaceous, fresh green, glabrescent or occasionally puberulent, subabruptly narrowed to an acute apex, gradually attenuated to hardly sheathing base; bladeless sheaths at base of shoots few, membranous, brownish or reddish-brownish. Culms lateral, arising from previous year's shoots, usually solitary, 15-30 cm tall, 4-6-noded, smooth, three-sided, bearing spikes from below the middle. Bracts an infaltd sheath, 1-2 cm long, obliquely truncate at apex occasionally with a short deltoid elongation of the dorsal portion. Spikes 2- or 3-nate, androgynous, subglobose, 4-6 mm long and as wide, densely many-flowered; the peduncles erect, unequal in length exerted beyond the sheath. Pistillate glumes ovate-orbicular, 2 mm long, membranous, pale with a broad green costa, rounded to often mucronulate apex; the costa obscurely 3-nerved. Utricles surpassing glume, patent, obovoid or obovoid-ellipsoidal, 2-2.5 mm long, 3-sided, becoming dark green at maturity, herbaceous, many-nerved, glabrous, cuneate-attenuate at base, subabruptly contracted above to a truncate orifice; beak not developed. Achenes tightly inclosed, broadly elliptic, 1.7 mm long, 3-sided, contracted at both ends; style very short; stigmas 3, short, less than 1 mm long.

Voucher specimen. T. Koyama 6867. Japan. Nara Prefecture, the Akame 48 Falls (NY).

Distribution. Relatively poorly vegetated forest bed or half-open scrub slope. Locally occurring in western Japan from Kinki District westwards to Yamaguchi Prefecture, and in Shikoku Island.

Explanation of Plate 1. A, habit. B, portion of leaf blade. C & D, dorsal and ventral views of prophyll. E, staminate glume. F, stamen. G, utricule at anthesis. H, pistillate glume. I, dorsal view of mature utricule. J, orifice of utricule. K, transverse section of utricule. L, dorsal view of achene. Scales for Figs. H, I and L = 1 mm.

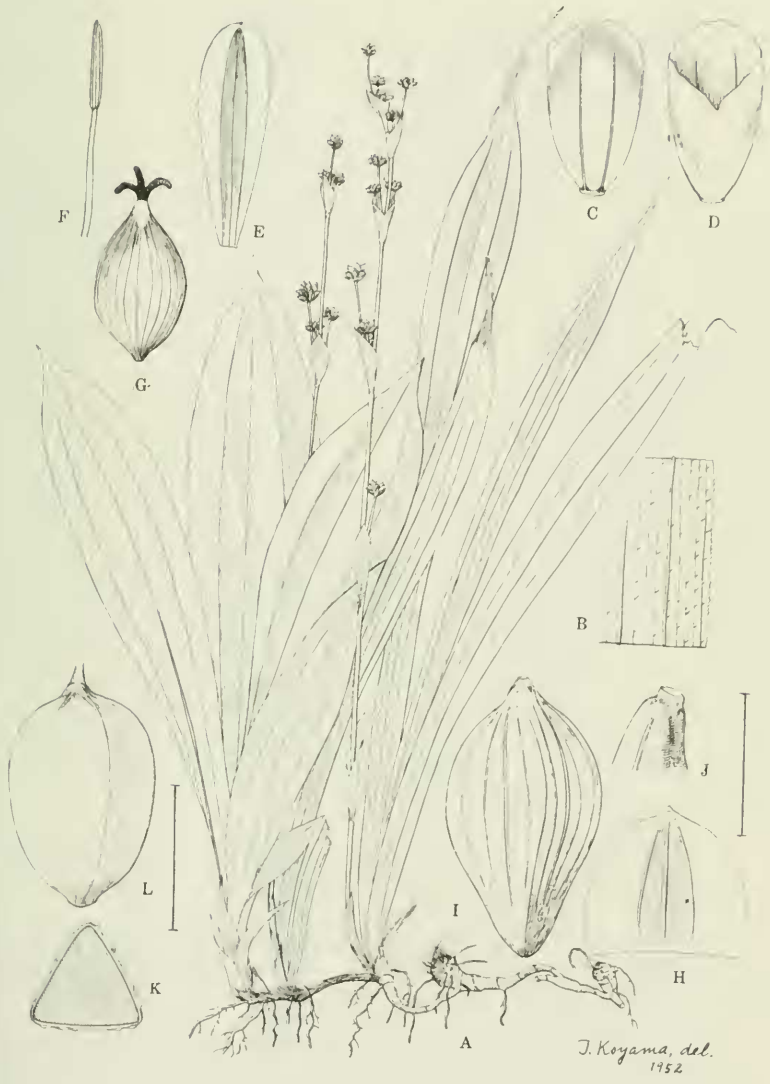


Plate 1. *Carex pachygyna* Franchet & Savatier

## Plate 2. CAREX SIDEROSTICTA Hance

Carex siderosticta Hance, Journ. Linn. Soc. 13: 89, 1873.

For synonyms see T. Koyama, Journ. Fac. Sci. Univ. Tokyo, III 8 (4):232, 1962.

Perennial herb with long-creeping slender stolons; the stolons ca. 1 mm thick, clothed with brownish scales soon disintegrating into fibers, the internodes 1-2 cm long. Leaves radical, fasciculated in sterile herbaceous, soft, weakly inversely W-shaped in transverse section with 3 costas, light green, glabrous or minutely puberulent, gradually narrowed to acute apex, gradually attenuate below to often reddish-purplish-tinged base, hardly sheathing; a few basal sheaths cataphylloid, light purplish-brown or cinnamon-colored. Culms lateral, few arising from rhizome neck of previous year's shoots, 14-40 cm tall, slender, 3-sided, smooth throughout, 4- to 6-noded, bearing inflorescence from below the middle. Bracts a slightly inflated bladeless sheath, 1-1.7 cm long, the mouth obliquely truncate with white or slightly brown-tinged membranous margin; rarely the dorsal portion of sheaths slightly elongated into short blade. Spikes on exserted erect peduncle, bisexual, cylindrical, single or binate, sometimes in part further branched; the staminate portion clavate, light brown, 1-1.2 cm long, many-flowered; the pistillate portion sparsely with several flowers. Pistillate glumes elliptic, 3.5-4 mm long, membranous, pale-green and occasionally brownish-maculate on both margins, with a broad green 3-nerved costa on back, contracted to mucicous apex. Utricles slightly shorter than glume, obovoid-ellipsoidal, 3-3.5 mm long, 3-sided, thinly herbaceous, light or yellow-green, finely many-nerved, glabrous, subabruptly contracted to round apex, cuneate-attenuate to base with a very short stipe, the beak hardly developed. Achenes tightly enclosed, broadly elliptic to nearly orbicular, 3-sided, 2.5-2.75 mm long, contracted at both ends; style very short; stigmas 3, linear, 3 mm long, reddish-purplish.

Voucher specimen. T. Koyama 6787. Japan, Tokyo Prefecture, Momonokidaira near Asakawa, 700 m alt. (NY).

Distribution. Undergrowth of temperate deciduous forest, from southeastern Hokkaido through the Mainland, Shikoku and Kyushu of Japan eastwards to southern Manchuria and southeastwards to northern China Proper.

Explanation of Plate 2. A, habit. B, marginal portion of leaf blade. C, ligule. D, spike. E, staminate flower and its glume. F, pistillate flower and its glume. G, pistillate glume at maturity. H, dorsal view of mature utricle. I, dorsal view of achene. Scales for Figs. G, H and I = 1 mm.

Forma variegata (Akiyama) T. Koyama, Journ. Fac. Sci. Univ. Tokyo III, 8 (4): 232, 1962, a wild form with white-striped leaf-blades, is occasionally cultivated in Japan as an ornamental grass.



1950

Plate 2. *Carex siderosticta* Hance

## Plate 3. CAREX CILIATO-MARGINATA Nakai

Carex ciliato-marginata Nakai, Repert. Sp. Nov. 13: 244, 1916.

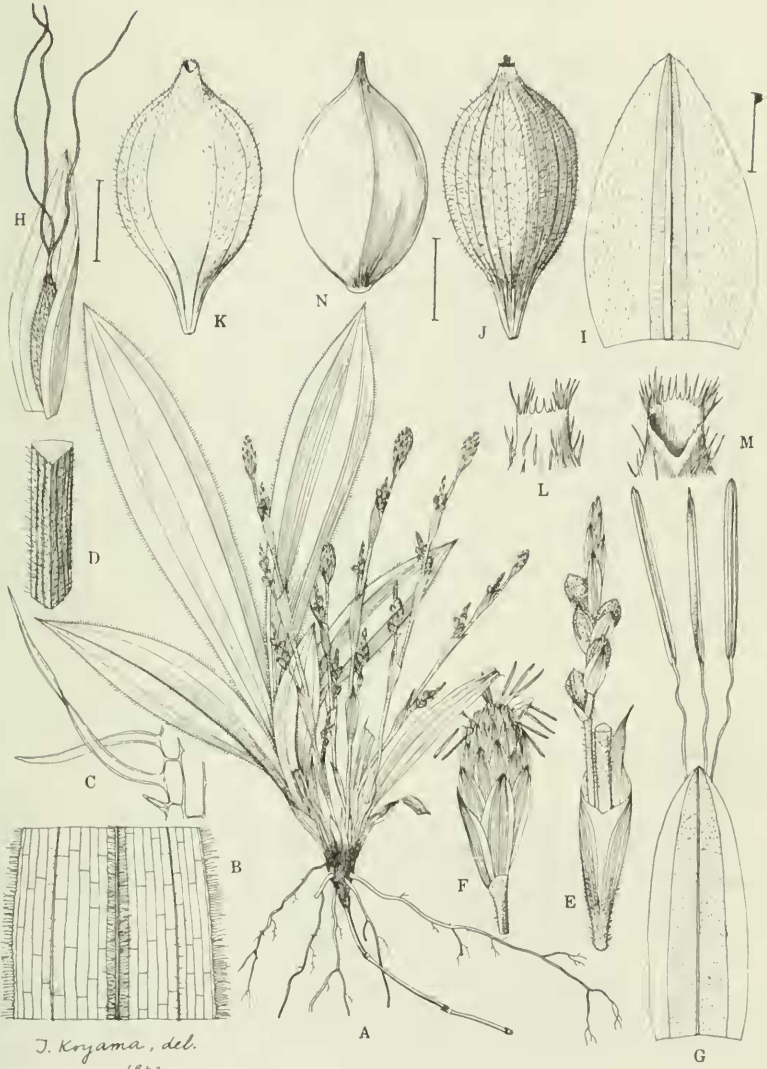
Synonym. Carex siderosticta Hance var. pilosa Léveillé ex Nakai, l. c., 244, 1916. Invalid name in synonymy.

Whole plant densely and minutely punctulate with purple-brown. Perennial herb with slender rhizome clothed with brown fibers; stolons slender, obliquely ascending, the internodes ca. 1 mm thick, 1-2 cm long. Leaves fascicled, lance-oblong, oblanceolate or lanceolate, 1-1.5 cm wide, 8-15 cm long at anthesis and later elongated to 25 cm, surpassing culms, herbaceous, weakly inversed-W-shaped in transverse section, 3-costate, green or light green, puberulent with short soft hairs on both sides, densely ciliate with white hairs on entire margin, acute at apex, gradually attenuated below to more or less brownish-purplish-tinged base, hardly sheathing. Culms lateral, few to a clump, 6-12 cm tall, slender, sparsely puberulent with short soft hairs, 3- or 4-noded, bearing spikes from the second node to apex. Bracts spathe-like, sheathing to 5-7 mm, pubescent especially toward the base. Spikes single at each node; the terminal one staminate, oblong or obovate-oblong, 5-8 mm long, 2-3.5 mm thick, pale-green; the lateral ones bisexual with a short staminate part and 3-6 pistillate flowers; the pistillate flowers rather contiguous; peduncles nearly inclosed in or slightly exerted beyond the sheathing portion of bract. Pistillate glumes ovate, 2.5-3 mm long, pale and membranous on both sides, light green on 3-nerved costa, contracted to mucous apex. Utricles nearly as long as glume, 3-3.5 mm long, obovoid, obscurely 3-sided, herbaceous, greenish, many-nerved, wholly pubescent, contracted above to a very short beak, cunate attenuate at base. Achenes tightly inclosed in utricle, elliptical, 3-sided, 1.6 mm long; style short; stigmas 3-4 mm long, filiform, purplish.

Voucher specimen. T. Koyama 5998. Japan. Mainland, Uri-pass at Aichi and Shizuoka border, 350 m alt. (NY).

Distribution. Relatively dry herbose or scrub frequently on serpentine or calcareous rocks. Pacific side of the Mainland of Japan from Shizuoka Prefecture through Kii Peninsula westwards to Hiroshima Prefecture, and southwestwards to Shikoku Island; Tsushima Islands; Korea and adjacent Manchuria.

Explanation of Plate 3. A, habit. B, portion of leaf blade. C, hairs of leaf margin. D, portion of culm. E, lateral spike and its bract. F, terminal staminate spike. G, staminate glume and staminate flower. H, pistillate flower with glume. I, pistillate glume at maturity. J, dorsal view of mature utricle. K, ventral view of mature utricle. L & M, dorsal and ventral views of utricular beak. N, dorsal view of achene. Scale for Figs. I, J, K and N = 1 mm.



J. Koyama, det.  
1953

Plate 3. *Carex ciliato-marginata* Nakai

## Plate 4. CAREX OKAMOTOI Ohwi

Carex Okamotoi Ohwi, Acta Phytotax. Geobot. 5: 23, 1936.

Rhizome with long creeping stolons, clothed with brownish scales, the internodes 1-1.8 cm long, 1.5 mm thick. Leaves broadly linear to linear-lanceolate, 10-28 cm long, 4-8 mm broad, light green, soft, herbaceous, 3-costate, acute at apex, gradually attenuate below to pale brown short-sheathing base; ligule auriculate, 1-2 mm long, shallowly bifid at dorsal portion, densely maculate with brownish minute dots, a few basal sheaths bladeless, cinnamon-brownish. Culms lateral, 13-18 cm tall, slender, 3-sided, smooth, 4- or 5-nodose, bearing spikes from below the middle. Bracts a bladeless sheath, slightly spatiform, 1-2 cm long, greenish. Spikes single, on slender exerted peduncle; the terminal on staminate, oblanceolate or oblong, 8-10 mm long; lateral ones bisexual, 1-2.5 cm long, the staminate portion oblong, 5 mm long, the pistillate portion remotely with 2- to 4-flowered. Pistillate glumes broadly elliptical, 2.25-2.5 mm long, pale, contracted above to acutish apex, broadly whitish membranous on margins, the costa broad, green, obscurely 3-nerved. Utricles about as long as or slightly exceeding the glume, broadly obovate or almost orbicular-obovate, 2.5 mm long, 3-sided, herbaceous, pale-green, glabrous, distinctly several-nerved, contracted at short-stipitate base, rounded above to very short slightly recurved beak. Achenes tightly inclosed, broadly elliptic to nearly suborbicular, 2-2.25 mm long, 3-sided; stigmas 3.

Voucher specimen. J. Ohwi, 7253. Korea, Mt. Chiisan.

Distribution. Rare in forest. Known only from Mt. Chiisan in Korea, the type locality.

Explanation of Plate 4. A, habit. B, marginal portion of leaf blade. C, orifice of leaf sheath showing ligule. D, portion of culm. E, prophyll. F, staminate glume. G, pistillate glume. H, I, dorsal and ventral views of mature utricle. J, K, two views of utricular orifice. L, dorsal view of mature achene. Scale for Figs. G, H, I and L = 1 mm.

Note. Carex Okamotoi and the following species, Carex tumidula, appear to be closely related to Carex grandiligulata Kükenthal and Carex glossostigma H.-Mazzetti of northern China Proper especially in the well-developed ligules and narrow leaves. Both of these Chinese sedges poorly collected and no adequate materials are available for illustrations.



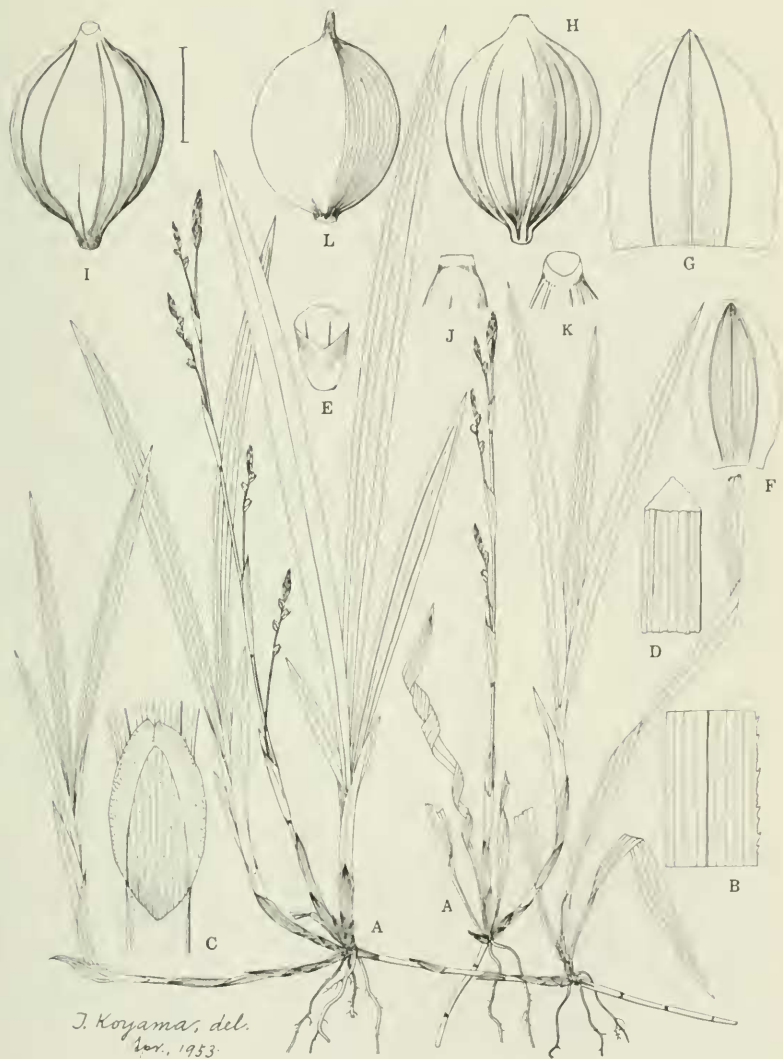


Plate 4. *Carex okamotoi* Ohwi

## Plate 5. CAREX TUMIDULA Ohwi

Carex tumidula Ohwi, Mem. Coll. Sci. Kyoto Imp. Univ. B, 6: 244, 1931.

Perennial with long creeping slender rhizomes clothed with ferruginous scales. Leaves linear, 2-3 mm wide, 10-40 cm long, surpassing culms, 3-costate; the sheath up to 8 cm long, tinged with ferruginous brown, puberulent with short hairs; ligule ca. 1 mm long. Culm lateral, 15-30 cm tall, slender, smooth, clothed at base with a few short-bladed sheaths, 3- or 4-nodose, bearing spikes from the middle. Bracts with elongate blade, long-sheathing; the blade shorter than or surpassing spike. Spikes single or binate, sometimes branched, bisexual or sometimes the terminal one staminate; staminate part clavate, ferruginous; pistillate part loosely with 2 to 4 flowers; peduncles inclosed or slightly exerted beyond the bract sheath. Staminate glume obovate, ferruginous-tinged, broadly white-membranous on upper margin. Pistillate glumes ovate-elliptical, 2.5 mm long, acutish or obtusish at apex, tinged with ferruginous brown, 3-nerved at costa. Utricles slightly longer than glume, ellipsoidal, 3 mm long, obtusely 3-sided, membranous, dull green with minute ferruginous punctulations, prominently 2-costate, faintly nervulose, subabruptly attenuate above to a slightly recurved bent beak a apex, contracted below to a cunate base. Achenes tightly inclosed, obovate-elliptic, 3-sided, 2 mm long, abruptly attenuate to both ends; style elongated, stigmas 3.

Voucher specimen. I. Yogo, s.n. Japan, Shikoku, Mt. Kurotaki (KYO).

Distribution. Known only from two localities in Ehime Prefecture, northern Shikoku, Japan.

Explanation of Plate 5. 1, habit. 2, portion of leaf blade. 3, 4, ventral and lateral views of the upper part of leaf sheath showing ligule. 5, lateral spikes. 6, staminate glume. 7, stamen. 8, pistillate glume. 9, 10, dorsal and lateral views of mature utricle. 11, transverse section of utricle. 12, dorsal view of achene. Scale for Figs. 6, 8, 9, 10 and 12 = 1 mm.

## Plate 6. CAREX FILIPES Franchet &amp; Savatier

Carex filipes Franchet & Savatier, Enum. Pl. Japon. 2: 148, 1877 & 576, 1879.

spp. filipes.

Soft perennial tufted in large clumps. Leaves many, radical, linear 10-20 cm long, 2-4 mm broad, flattish, fresh green or slightly glaucous, soft, thinly herbaceous, subabruptly acute at apex; the sheath dark purple

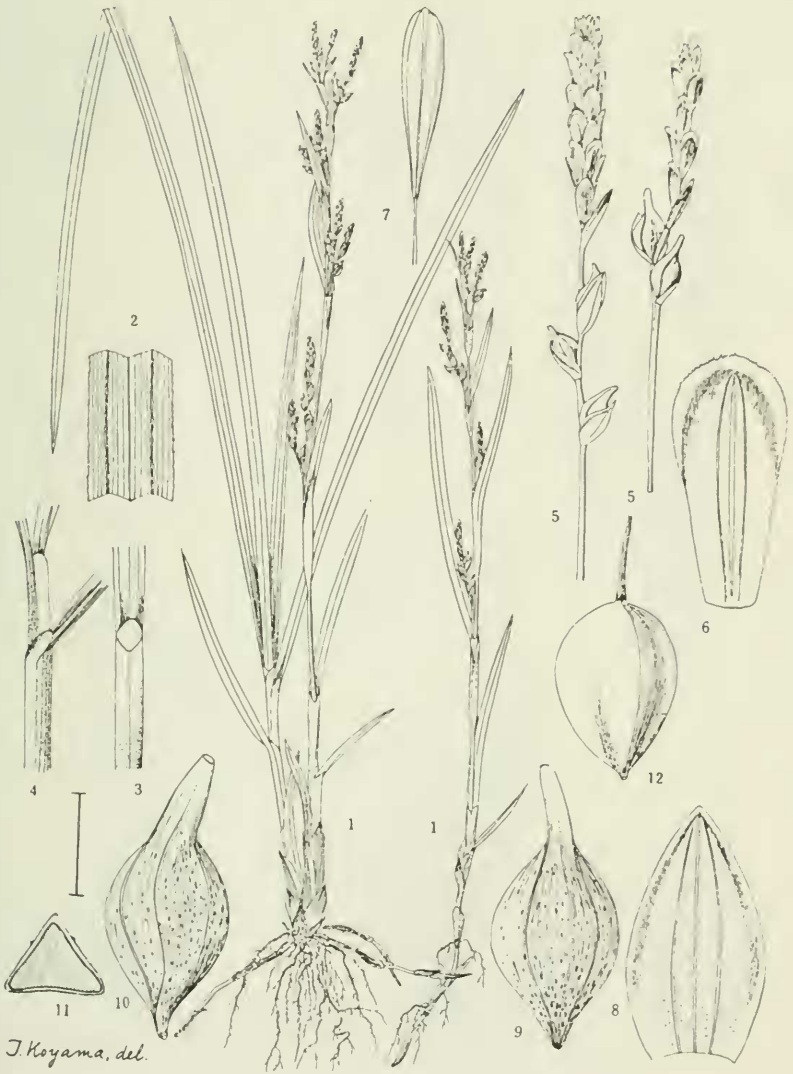


Plate 5. *Carex tumidula* Ohwi

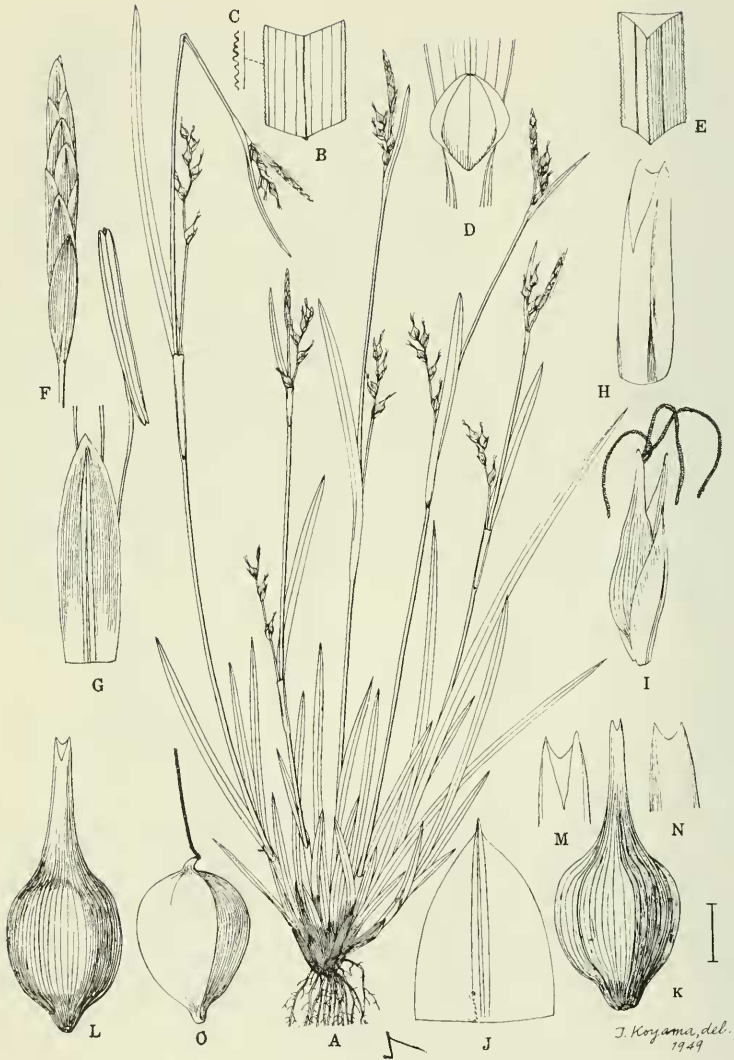


Plate 6. *Carex filipes* Franchet & Savatier

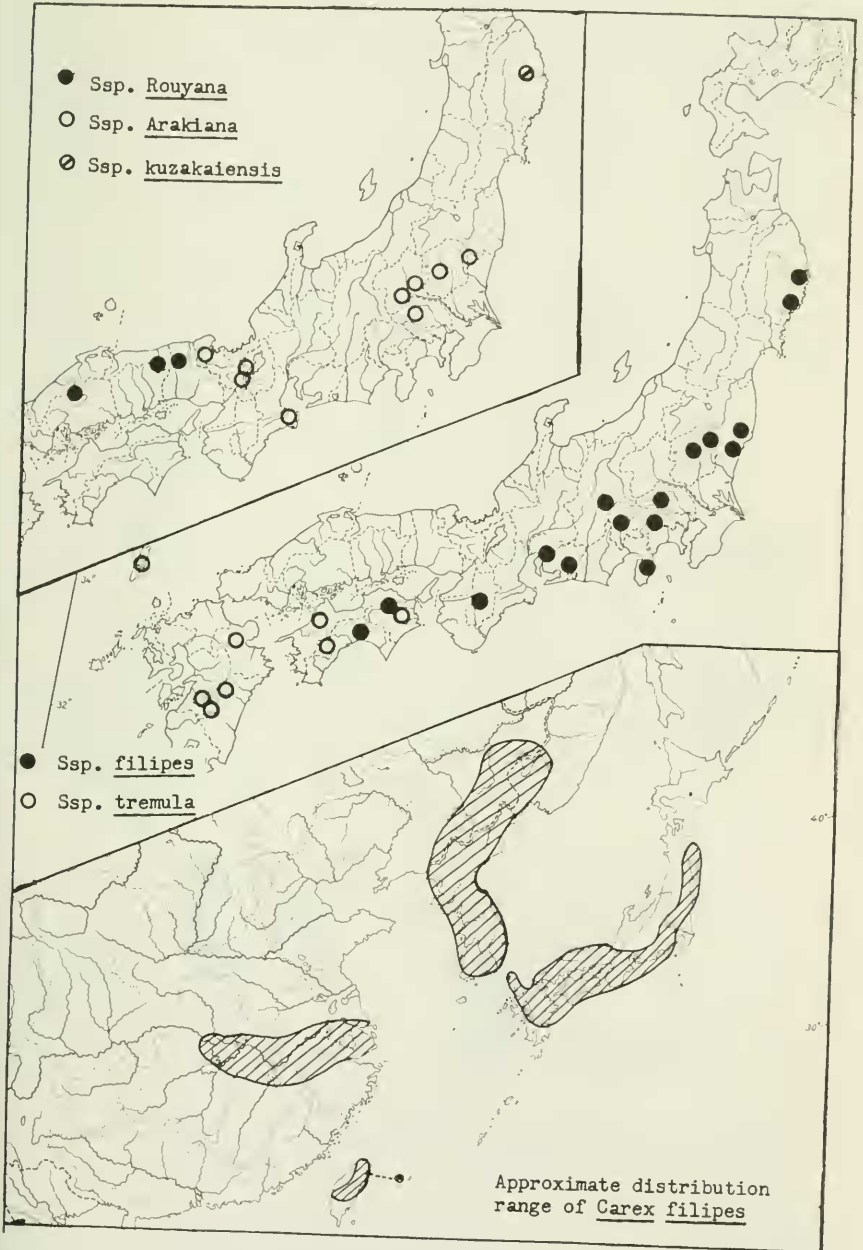
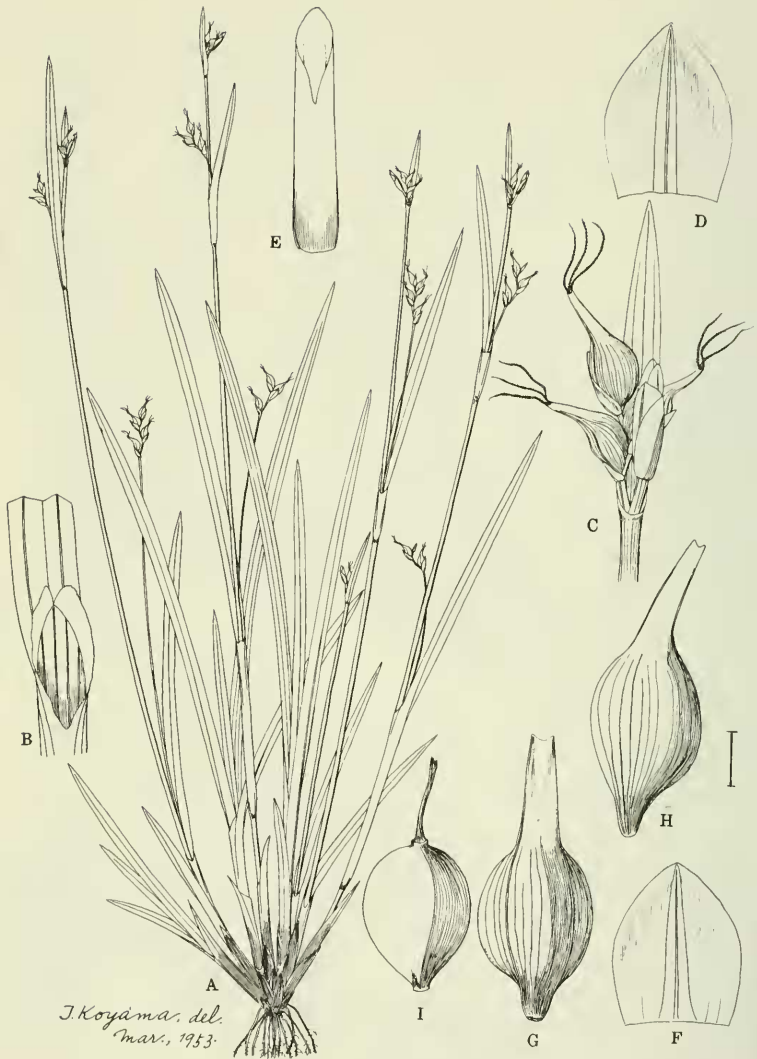


Figure 1. Distribution of Carex filipes



J. Koyama, del.  
Mar., 1953.

Plate 7. Carex filipes ssp. tremula T. Koyama

or purple-brown. Culms many, 25-40 cm tall, triquetrous, smooth, soft, mostly 2-noded, internodes elongated. Spikes 3 sometimes 4, occasionally the lowest one subbasal; terminal staminate and next pistillate ones contiguous, the other pistillate one distant; staminate spikelet linear-oblong, 1-1.5 cm long, usually purplish or purple-brown, erect on short peduncle almost inclosed in the uppermost bract-sheath; pistillate spikes loosely 3- to 5-flowered on filiform short-exserted peduncle, surpassed by the bract-blade. Bracts leaf-like, long-sheathing. Pistillate glumes broadly ovate, thinly membranous, 3-3.5 mm. long, pale and often tinged with purplish-brown above; costa green, more or less 3-nerved, making a short mucro at acute apex. Utricles longer than glume, ovoid-fusiform, 3-sided, 5-6 mm long, light green, glabrous, in addition to 2 distinct costas faintly many-nerved, contracted to cuneate base, gradually tapering above into a long beak, the orifice obliquely truncate, occasionally somewhat 2-toothed. Achene tightly inclosed in the lower part of utricle, obovate, 2.5 mm long, 3-sided; style slender, elongated; stigmas 3, filiform.

Voucher specimen. T. Koyama s.n. 13 May 1951. Japan, Mainland, Saitama Prefecture, Mt. Buko, 1000 m (NY).

Distribution. Slightly wet ground of half-shaded temperate forest. Pacific Side of the central part of Mainland Japan, from Kanto District westwards to eastern Kinki District, and Shikoku Island.

Explanation of Plate 6. A, habit. B, C, portion of leaf blade. D, orifice of leaf sheath showing ligule. E, portion of culm. F, staminate spikelet. G, staminate glume. H, prophyll. I, utricle with pistillate glume at anthesis. J, pistillate glume. K, L, dorsal and ventral views of mature utricle. M, N, dorsal and ventral views of utricular orifice. O, achene. Scale for Figs. J, K, L and O = 1 mm.

Plate 7. *CAREX FILIPES* ssp. *TREMULA* T. Koyama

Carex filipes Franchet & Savatier ssp. tremula (Ohwi) T. Koyama, stat. nov.

Synonym. Carex arisanensis Hayata var. tremula Ohwi, Mem. Coll. Sci. Kyoto Univ. B, 5: 255, 1930.

Carex tremula (Ohwi) Ohwi, Acta Phytotax. Geobot. 2: 28, 1933.

Carex filipes Franchet & Savatier var. tremula (Ohwi) Ohwi, Mem. Coll. Sci. Kyoto Univ. B, 11 (5): 423, 1936.

Resembling Carex filipes ssp. filipes, but smaller. Culms 10-25 cm tall. Leaves abruptly acute at apex. Spikes usually 3; terminal one staminate, small oblong, 5-8 mm long, not prominently colored, always surpassed by the next pistillate spike, the peduncle short, inclosed in the

uppermost bract-sheath; pistillate spikes 2- to 4-flowered, flowers more contiguous than in ssp. filipes. Pistillate glumes broadly ovate, about half as long as utricule, obtusish at apex.

Voucher specimen. K. Mayebaru 180. Japan, Kyushu, Kumamoto Prefecture, Mt. Ichifusa (NY).

Distribution. Undergrowth of temperate forest. Shikoku and Kyushu Islands of western Japan.

Explanation of Plate 7. A, habit. B, orifice of leaf sheath showing ligule. C, apical two spikes with the uppermost bract. D, staminate glume. E, prophyll. F, pistillate glume. G, H, dorsal and lateral views of mature utricule. I, dorsal view of achene. Scale for Figs. F - I = 1 mm.

Plate 8. CAREX FILIPES ssp. ARISANENSIS T. Koyama

Carex filipes Franchet & Savatier ssp. arisanensis (Hayata) T. Koyama, Journ. Jap. Bot. 29: 41, 1954.

Synonyms. Carex arisanensis Hayata, Mater. Fl. Formosa, 6: 130, t. 18, 1916.

Carex filipes Franchet & Savatier var. arisanensis (Hayata) T. Koyama, Journ. Fac. Sci. Univ. Tokyo, III, 8 (4): 228, 1962.

Differing from Carex filipes ssp. filipes chiefly by the broader leaf blades gradually acute at apex, lateral spikes surpassing the bract and the longer beak of utricles.

Tufted in large clumps. Leaves linear, shorter than or exceeding culms, 20-40 cm long, 4-6 mm wide, soft, herbaceous, 3-costate, gradually narrowed to long acuminate apex, gradually tapering below to slender sheath often colored with dark brown or purple brown; some basal sheaths bladeless. Culms sublateral, (20-) 25-45 cm long, slender, 3-sided, smooth, 2- or 3-noded. Spikes 2 or 3, the terminal staminate and the next pistillate contiguous, the third very distant; staminate spike lance-oblong, short, 4-7 mm long, surpassed by the next pistillate spike; pistillate spikes oblong subdensely with several flowers, 6-10 mm long; peduncles slender, erect, long-exserted beyond the bract-blade. Bract short-bladed, the sheath up to 4 cm long. Pistillate glumes ovate-oblong 3-4 mm long, pale, occasionally tinged with brown, the costa green, obscurely 3-nerved, ending at muticous or mucronulate apex of glume. Utricles about twice as long as glume, 5.5-6.25 mm long, fusiform, 3-sided herbaceous, 2-costate and faintly many-nerved, cuneate at base, narrowed to a long upright beak. Achene tightly inclosed in the lower part of the utricule, obovate-elliptic, 3-sided, 3 mm long; style elongate; stigmas 3.



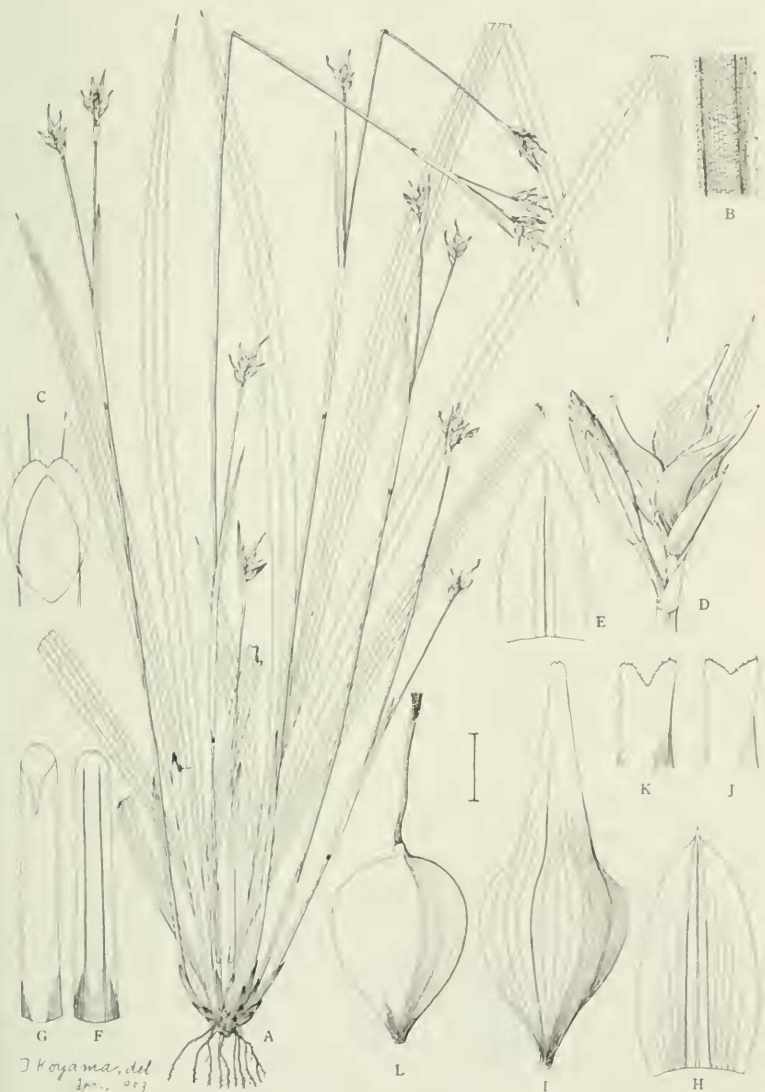


Plate 8. Carex filipes ssp. arisanensis T. Koyama

Voucher specimen. J. Ohwi 662. Formosa, Taipei Hsien, Agyoku in Monsan County (NY).

Distribution. Undergrowth of warm-temperate forest at high altitude in Formosa.

Explanation of Plate 8. A, habit. B, marginal portion of leaf blade. C, ligule. D, the uppermost two spikes and bract. E, staminate glume. F, G, two views of prophyll. H, pistillate glume. I, dorsal view of utricle. J, K, two views of utricular orifice. L, dorsal view of achene with style. Scale for Figs. H, I and L = 1 mm.

Plate 9. CAREX FILIPES ssp. ROUYANA T. Koyama

Carex filipes Franchet & Savatier ssp. Rouyana (Franchet) T. Koyama, Journ. Jap. Bot. 29: 42, 1954.

Synonyms. Carex Rouyana Franchet, Bull. Soc. Philom. Paris, 8<sup>e</sup> sér., 7: 51, 1895.

Carex sparsinux C. B. Clarke ex Franchet, Nouv. Archiv. Muséum, 3<sup>e</sup> sér., 10: 66, 1898.

Carex filipes Franchet & Savatier var. sparsinux (C. B. Clarke ex Franchet) Kükenthal, Pflanzenz. 4 (20): 639, 1909.

Carex filipes Franchet & Savatier var. Rouyana (Franchet) Kükenthal l. c., 640, 1909.

Differing from Carex filipes ssp. filipes by the larger staminate spike, which surpasses the uppermost pistillate spike, the brown color of staminate glumes and basal sheaths, and longer beak of utricles.

Tufted in large clumps. Leaves many, linear, 3-6 mm wide, sub-abruptly acute at apex; basal sheaths brown. Culms 30-50 cm tall, remarkably 3-nodose. Spikes 3 (rarely 4); terminal spike staminate, oblong-cylindrical, 1.5-2.5 cm long, 3 mm thick, surpassing the highest pistillate spike, the peduncle long-exserted; staminate glumes, brown and whitish-margined; lateral spikes pistillate, loosely 5- to 8-flowered, slightly inclined to pendant on capillary peduncle. Bracts short-bladed, sheathing. Pistillate glumes broadly ovate, thinly membranous, 3/5 as long as utricle, brownish-tinged on both sides, mucous at apex. Utricles 5.5-6.5 mm long, fusiform, 3-sided, 2-costate and finely many-nerved, cuneate at base, contracted above to a long beak, obliquely truncate at orifice. Achenes tightly inclosed in the lower part of utricle, elliptic-obovate, 3 mm long.

Voucher specimen. T. Koyama 6790. Japan, Mainland, Tochigi Prefecture, foot of Mt. Kogashi, 600 m. (NY).

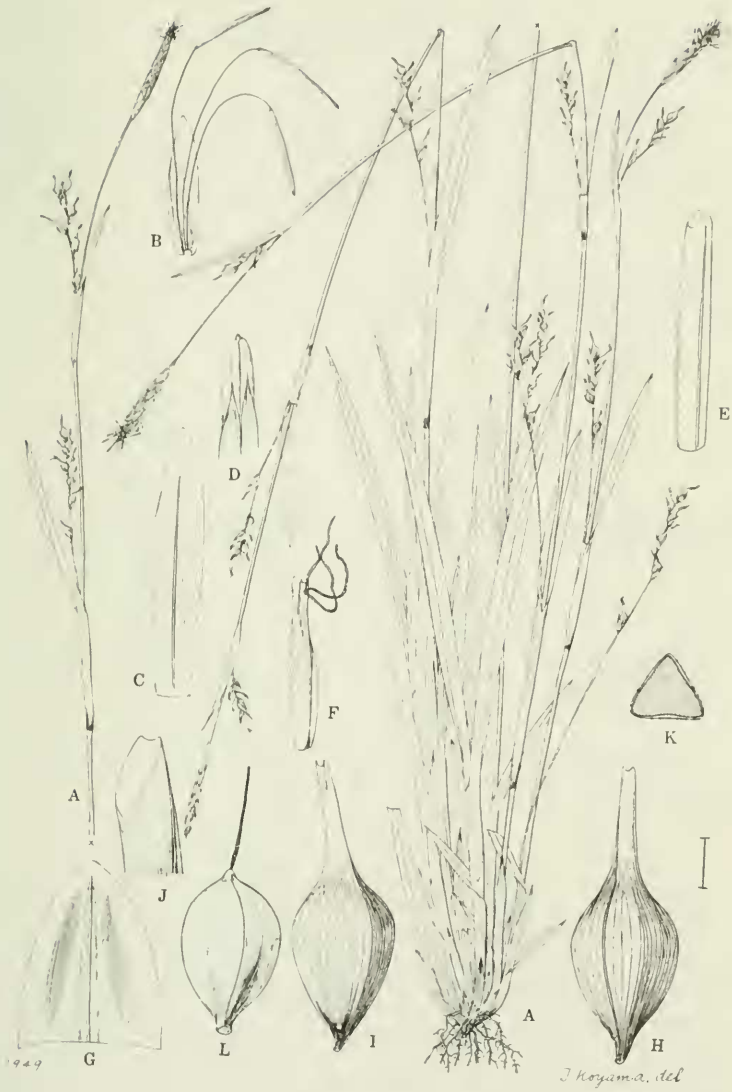


Plate 9. *Carex filipes* ssp. *rouyana* T. Koyama

Distribution. Slightly wet ground of temperate forest. Pacific side of Central Japan from Kwanto District southwestwards to Yamaguchi Prefecture, and the Yantze River Valley of central China.

Explanation of Plate 9. A, habit. B, staminate flower with glume. C, staminate glume. D, anther apex. E, prophyll. F, pistillate flower with utricle and glume. G, pistillate glume. H, I, dorsal and ventral views of mature utricle. J, utricular orifice. K, transverse section of utricle. L, dorsal view of mature achene. Scale for Figs. G, H, I and L = 1 mm.

Note. Carex sparsinux C. B. Clarke from central China hardly differs from Japanese ssp. Rouyana.

Plate 10. CAREX FILIPES ssp. OLIGOSTACHYS T. Koyama

Carex filipes Franchet & Savatier ssp. oligostachys (Meinshausen ex Maximowicz) T. Koyama, stat. nov.

Synonyms. Carex oligostachys Meinshausen ex Maximowicz, Mel. Biol. 12: 566, 1886.

Carex egena Leveille & Vaniot, Repert. Sp. Nov. 4: 227, 1907.

Carex filipes Franchet & Savatier var. oligostachys (Meinshausen ex Maximowicz) Kükenthal, Pflanzenr. 4 (20): 641, 1909.

Differing from both ssp. filipes and ssp. Rouyana by much larger plant, broader leaves as much as 13 mm in width, and deltoid-ovate pistillate glumes only half as long as utricle.

Perennial with short rhizome. Leaves broadly linear, 9-13 mm wide soft, herbaceous, glaucous-green; some basal sheaths brown-tinged or purplish-brownish. Culms up to 60 cm tall, remotely 3- or 4-nodose. Spikes usually 3; terminal spike staminate, short-cylindrical, brown or purplish-brown, much surpassing the highest pistillate spike, the peduncle long-exserted, upright; lateral spikes 2 or 3, pistillate, inclined or pendant on capillary peduncle long-exserted beyond the bract, loosely several-flowered. Bracts with well-developed blade, long-sheathing. Pistillate glumes deltoid-ovate, half as long as utricle, thinly membranous, purplish-brownish-tinged on both sides, pale-margined, contracted to acutish apex, the costa obscurely 3-nerved. Utricles fusiform, 3-sided, 6 mm long, cunate at base, tapering above to a long beak, obliquely truncate at orifice. Achenes 2.5-3 mm long, obovate-elliptical, 3-sided

Voucher specimen. J. Ohwi 136. Korea, Mt. Diamantino.(NY).

Distribution. Temperate forest of Korea, Ussuri and southern Manchuria, relatively sporadic.



Plate 10. *Carex filipes* ssp. *oligostachys* T. Koyama

Explanation of Plate 10. A, habit. B, prophyll. C, pistillate glume. D, E, dorsal and lateral views of mature utricle. F, dorsal view of achene. Scale for Figs. C, D and E = 1 mm.